

Trend Study 16B-7-97

Study site name: East Dairy Fork.

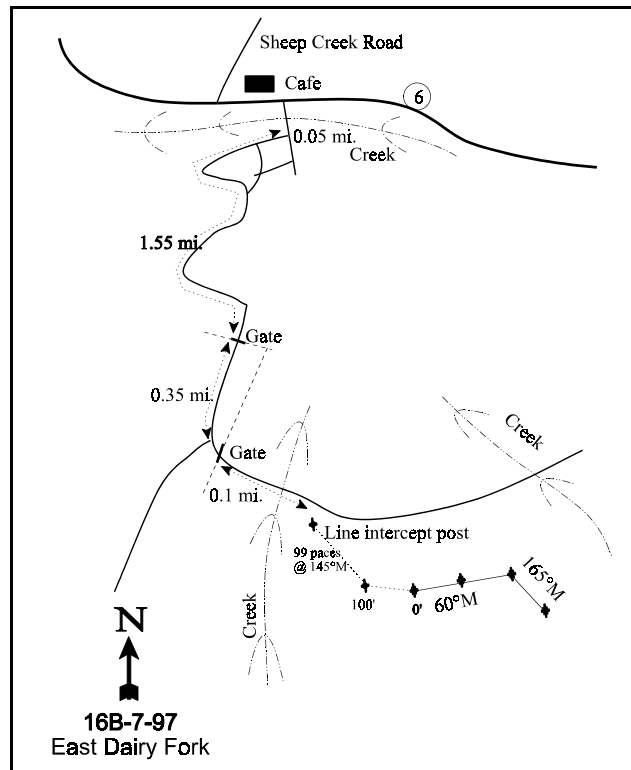
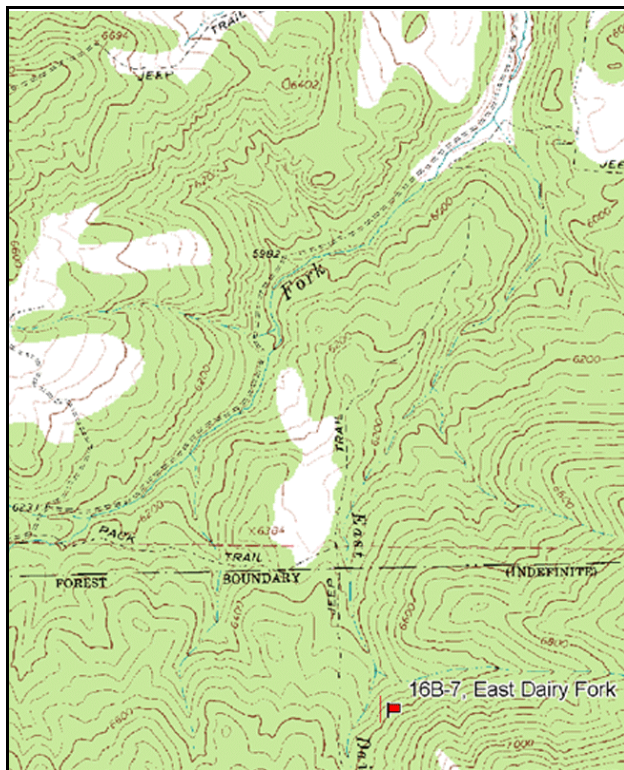
Vegetation type: Mountain Brush.

Compass bearing: frequency baseline 276 degrees magnetic (line 2-3 @ 60°M, line 4 @ 165°M).

Frequency belt placement: line 1 (11& 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

Near the Sheep Creek cafe on Highway 6, take Dairy Fork Road on the south side of the highway 0.25 miles to a fork. Stay left on the main road 0.25 miles to another fork. Again, stay left and go 0.5 miles to another fork in the road. Take this side road to the left (east) and go 1.55 miles, crossing the creek and staying to the right at a minor fork less than 0.05 miles after the creek. Here you will encounter a fence/gate. Continue for another 0.35 miles to another fork and gate on the left (east). Take this fork 0.1 miles to the bottom of a wash. Where the road crosses the wash, take an azimuth of 133 degrees magnetic and walk 13 paces to a line intercept stake. From this stake, walk 99 paces at 145 degrees magnetic to the 0-foot baseline stake marked by some wire.

Map Name: Mill Fork

Diagrammatic Sketch

Township 10S, Range 5E, Section not surveyed

GPS: NAD 27, UTM 12S 4420531 N 470792 E

DISCUSSION

East Dairy Fork - Trend Study No. 16B-7

*****SUSPENDED** - This study was not read in 2002. It was evaluated by project personnel and determined that it does not provide an adequate representation of critical big game habitat, and receives very little use by wildlife. A pellet group transect was read in 2002. The site narrative and data tables from the 1997 report are included below.

The East Dairy Fork study samples a mountain brush slope with a prominent overstory of oak, pinyon, and Rocky Mountain juniper. The study is located on National Forest land adjacent to Division land, but may be on a private inholding. Use by big game has been light on the site. Cattle were in the area at the time of study establishment in 1989. Sheep droppings were observed on the site in 1997 and 2002. Pellet group transect data taken in 2002 estimated only 2 elk days use/acre (5 edu/ha) and 11 deer days use/acre (28 ddu/ha). A deer fawn was observed as project personnel walked through the site in 2002.

The study is on a steep, 41% slope with a western aspect. The soil is light colored with a clay texture and a neutral pH (7.2). Phosphorus could be a limiting factor to plant development and growth with only 7.8 ppm found in the soil. A minimum of 10 ppm have been determined necessary for normal plant growth and development. Effective rooting depth is estimated at just over 14 inches. Rock and pavement are concentrated on the surface and produce 21% average cover. Due to the high percentage of rock, pavement, litter, and vegetation cover, bare soil occupies only 4% of the surface. Soils have a moderate erosion potential, but currently erosion is not serious. The drainage channels below the site showed scouring in 1989, however they are less so in 1997. Pedestalling and terracing are common all along the steep slopes.

The site supports a variety of browse species. Overstory species consist of Rocky Mountain juniper, pinyon pine, Gambel oak, and an occasional Douglas fir. Gambel oak is numerous and provides 42% of the total browse cover with an estimated density of 4,660 stems/acre in 1997. Mature plants are tall, averaging nearly 4 feet in height. Important understory shrubs include mountain big sagebrush, true mountain mahogany, and snowberry. Sagebrush are scarce with only 180 plants/acre estimated in 1997. Many of these are decadent with poor vigor yet light use. Snowberry is numerous with an estimated density of 15,999 plants/acre in 1989 and 4,400 in 1997. Almost all of the change in density is due to the much larger sample used in 1997 as there are no dead plants in the population. The new larger sampling design gives more accurate browse density estimates for species that characteristically have clumped or discontinuous distributions like snowberry. Snowberry is mostly mature and unutilized. The most preferred browse on the site is true mountain mahogany, but this species only accounts for 8% of the browse cover. Density was estimated at 1,065 plants/acre in 1989 and 540 in 1997. Mature plants average nearly 3 feet in height. Percent decadence is low and utilization is light to moderate with a few heavily hedged individuals. Use was reported to be heavier in 1989, and a quarter of the population displayed poor vigor. In 1997, some plants showed insect damage, but vigor was normal throughout the population. Percent decadence has declined from 25% in 1989 to only 4% in 1997. The population appears stable with adequate proportion of young plants (25% in 1989 and 7% in 1997).

The herbaceous component is suffering from possible overuse. For this type of site, the grass frequency is low and all grasses combined produce less than 3% cover. Kentucky bluegrass is the most abundant species (an increaser with grazing), accounting for 50% of the grass cover. The only other common species is a sedge (*Carex*). Forbs are fairly diverse and frequency is relatively high, but most are unavailable under the shrub canopy. Common species include timber poison vetch, mat penstemon, short stem wild buckwheat, and American vetch. The limited herbaceous understory contributes little for soil protection.

1989 APPARENT TREND ASSESSMENT

Soils appear to have a downward trend. The herbaceous understory, primarily grasses, is depleted. Trend for the browse component appears more stable.

1997 TREND ASSESSMENT

The soil trend is stable, but is in poor condition. Percent bare ground is low at only 4%, however shrub interspaces continue to erode due to the lack of herbaceous ground cover. The browse trend is up slightly for the most preferred key species, true mountain mahogany. Vigor has improved and percent decadence declined from 25% to 4%. Snowberry, mountain big sagebrush, and Gambel oak are of secondary importance. Trend for the herbaceous understory is down slightly for grasses but up for forbs. Nested frequency of bluebunch wheatgrass is down significantly, while frequency of Kentucky bluegrass is up significantly. Overall, trend is considered up slightly, but very poor.

TREND ASSESSMENT

soil - stable (3)

browse - slightly up for mahogany (4)

herbaceous understory - slightly up (4)

HERBACEOUS TRENDS --

Herd unit 16B, Study no: 7

T y p e	Species	Nested Frequency		Quadrat Frequency		Average Cover %
		'89	'97	'89	'97	
G	Agropyron spicatum	_b 38	_a 8	14	5	.07
G	Carex spp.	_a 17	_b 31	7	16	.95
G	Oryzopsis hymenoides	_b 50	_a 14	24	7	.14
G	Poa fendleriana	_b 16	_a -	6	-	-
G	Poa pratensis	_a 3	_b 48	2	18	1.42
G	Poa secunda	_a -	_b 10	-	4	.10
G	Stipa lettermani	-	4	-	1	.15
Total for Annual Grasses		0	0	0	0	0
Total for Perennial Grasses		124	115	53	51	2.84
Total for Grasses		124	115	53	51	2.84
F	Achillea millefolium	13	24	5	12	.26
F	Allium spp.	-	6	-	2	.01
F	Arabis spp.	-	3	-	2	.01
F	Artemisia ludoviciana	6	5	2	2	.06
F	Astragalus convallarius	_a 6	_b 44	4	23	.62
F	Astragalus spp.	6	12	2	4	.09
F	Astragalus utahensis	-	3	-	2	.03
F	Castilleja linariaefolia	-	2	-	2	.01
F	Calochortus nuttallii	-	4	-	2	.01
F	Chaenactis douglasii	-	3	-	2	.01
F	Cirsium spp.	_b 16	_a -	7	-	.18

Type	Species	Nested Frequency		Quadrat Frequency		Average Cover %
		'89	'97	'89	'97	
F	Comandra pallida	_a -	_b 18	-	8	.35
F	Crepis acuminata	-	1	-	1	.03
F	Cymopterus spp.	-	6	-	2	.01
F	Cynoglossum officinale	-	1	-	1	.00
F	Eriogonum brevicaule	_a 15	_b 45	7	21	.60
F	Ipomopsis aggregata	-	3	-	2	.03
F	Lathyrus lanszwertii	-	5	-	4	.08
F	Lupinus spp.	-	5	-	2	.01
F	Machaeranthera canescens	30	39	14	17	.19
F	Penstemon caespitosus	83	97	32	39	.93
F	Penstemon cyananthus	12	9	4	5	.23
F	Phlox longifolia	43	31	21	16	.10
F	Senecio multilobatus	11	5	5	3	.06
F	Stellaria jamesiana	_a -	_b 44	-	18	.19
F	Taraxacum officinale	3	-	1	-	-
F	Thalictrum fendleri	8	12	5	5	.39
F	Unknown forb-perennial	7	2	3	1	.00
F	Vicia americana	50	35	27	14	.73
F	Viola spp.	-	3	-	1	.00
Total for Annual Forbs		0	0	0	0	0
Total for Perennial Forbs		309	467	139	213	5.29
Total for Forbs		309	467	139	213	5.29

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Herd unit 16B, Study no: 7

Type	Species	Strip Frequency	Average Cover %
		'97	'97
B	Amelanchier utahensis	3	-
B	Artemisia tridentata vaseyana	7	.06
B	Cercocarpus montanus	21	3.56
B	Chrysothamnus nauseosus albicaulis	2	-
B	Chrysothamnus viscidiflorus viscidiflorus	10	.09
B	Juniperus scopulorum	13	12.57
B	Mahonia repens	48	4.49
B	Pachistima myrsinites	1	.03
B	Pinus edulis	3	.15
B	Prunus virginiana	2	.53
B	Pseudotsuga menziesii	1	.03
B	Quercus gambelii	55	18.79
B	Rosa woodsii	6	.45
B	Symphoricarpos oreophilus	66	4.33
B	Tetradymia canescens	2	-
Total for Browse		240	45.10

CANOPY COVER --

Herd unit 16B , Study no: 7

Species	Percent Cover '97
Cercocarpus montanus	.4
Juniperus scopulorum	16.0
Pinus edulis	.4
Quercus gambelii	20.4

BASIC COVER --

Herd unit 16B, Study no: 7

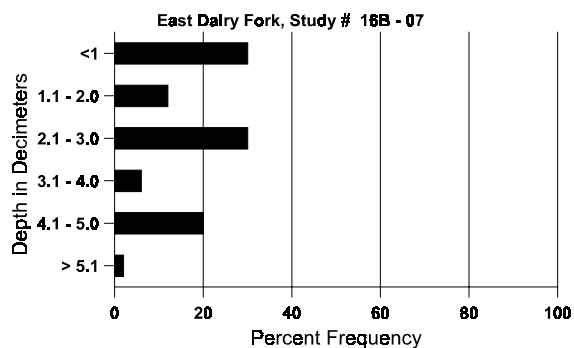
Cover Type	Nested Frequency	Average Cover %	
	'97	'89	'97
Vegetation	287	3.50	44.14
Rock	161	6.75	5.15
Pavement	191	17.75	15.89
Litter	377	63.00	54.85
Cryptogams	7	0	.04
Bare Ground	125	9.00	4.32

SOIL ANALYSIS DATA --

Herd Unit 16B, Study no: 07, East Dairy Fork

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
14.3	50.2 (17.6)	7.2	22.7	31.1	46.2	3.5	7.8	89.6	.6

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 16B, Study no: 7

Type	Quaency Frequency
	'97
Rabbit	5
Deer	4

BROWSE CHARACTERISTICS --

Herd unit 16B, Study no: 7

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total		
		1	2	3	4	5	6	7	8	9	1	2	3	4						
Amelanchier utahensis																				
S	89	3	-	-	-	-	-	1	-	-	4	-	-	-	266			4		
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0		
Y	89	4	2	-	3	-	-	2	-	-	11	-	-	-	733			11		
	97	1	-	-	-	-	-	-	-	-	-	1	-	-	20			1		
M	89	1	-	-	-	-	-	-	-	-	-	-	1	-	66	21	6	1		
	97	2	-	-	-	-	-	-	-	-	-	2	-	-	40	-	-	2		
% Plants Showing		<u>Moderate Use</u>					<u>Heavy Use</u>					<u>Poor Vigor</u>				<u>%Change</u>				
		'89					17%					00%					08%			
		'97					00%					00%					-92%			
Total Plants/Acre (excluding Dead & Seedlings)														'89	799	Dec:	-			
														'97	60		-			

A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	89	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	89	9	2	-	-	-	-	-	-	-	10	1	-	-	733	25	11	
	97	2	1	-	-	-	-	-	-	-	3	-	-	-	60	23	3	
D	89	17	3	-	-	-	-	-	-	-	18	2	-	-	1333		20	
	97	4	-	-	-	-	-	-	-	-	1	-	-	3	80		4	
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'89			16%			00%			00%							
		'97			11%			00%			33%							
Total Plants/Acre (excluding Dead & Seedlings)												'89	2132	Dec:	63%			
												'97	180		44%			
Cercocarpus montanus																		
S	89	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	89	2	1	1	-	-	-	-	-	-	4	-	-	-	266		4	
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	89	-	2	5	-	1	-	-	-	-	5	-	3	-	533	25	8	
	97	9	9	1	2	3	-	-	-	-	18	6	-	-	480	35	24	
D	89	2	2	-	-	-	-	-	-	-	3	-	1	-	266		4	
	97	-	1	-	-	-	-	-	-	-	1	-	-	-	20		1	
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'89			38%			38%			25%							
		'97			48%			04%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'89	1065	Dec:	25%			
												'97	540		4%			
Chrysothamnus nauseosus albicaulis																		
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20	6	17	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'89			00%			00%			00%							
		'97			00%			00%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'89	0	Dec:	-			
												'97	80		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	89	4	-	-	-	-	-	-	-	-	4	-	-	-	266	14	4	
	97	10	-	-	-	-	-	-	-	-	10	-	-	-	200	6	10	
D	89	15	-	-	1	-	-	-	-	-	16	-	-	-	1066		16	
	97	1	-	-	-	-	-	-	-	-	-	-	-	1	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%			-79%							
'97		00%			00%			07%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	1332	Dec:	80%			
												'97	280		7%			
Juniperus scopulorum																		
S	89	3	-	-	2	-	-	-	-	-	5	-	-	-	333		5	
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
Y	89	4	-	-	-	-	-	-	-	-	4	-	-	-	266		4	
	97	7	-	-	-	-	-	-	-	-	7	-	-	-	140		7	
M	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66	59	22	
	97	5	3	-	-	-	-	1	-	-	6	-	-	3	180	-	-	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%			- 4%							
'97		19%			00%			19%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	332	Dec:	-			
												'97	320		-			
Mahonia repens																		
S	89	21	-	-	-	-	-	6	-	-	27	-	-	-	1800		27	
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
Y	89	132	-	-	14	-	-	10	-	-	156	-	-	-	10400		156	
	97	75	-	-	-	-	-	-	-	-	75	-	-	-	1500		75	
M	89	37	-	-	29	-	-	24	-	-	90	-	-	-	6000	7	7	
	97	670	-	-	-	-	-	1	-	-	646	25	-	-	13420	4	5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%			- 9%							
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	16400	Dec:	-			
												'97	14920		-			
Pachistima myrsinites																		
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	-	-	-	2	-	-	-	-	-	2	-	-	-	40	7	2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%										
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	0	Dec:	-			
												'97	40		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Pinus edulis																	
S	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	2	-	-	-	-	-	-	-	-	-	2	-	-	40		2
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	2	-	-	-	-	-	-	-	-	-	2	-	-	40		2
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	1	-	-	-	-	-	-	-	-	-	1	-	-	20	-	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'89			00%			00%			00%						
		'97			00%			00%			00%						
Total Plants/Acre (excluding Dead & Seedlings)												'89		0	Dec:		-
												'97		60			-
Prunus virginiana																	
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	3	-	-	-	-	-	-	-	-	-	2	1	-	60	31	3
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'89			00%			00%			00%						
		'97			00%			00%			00%						
Total Plants/Acre (excluding Dead & Seedlings)												'89		0	Dec:		-
												'97		60			-
Pseudotsuga menziesii																	
S	89	1	-	-	-	-	-	-	-	-	-	1	-	-	66		1
	97	2	-	-	-	-	-	-	-	-	-	2	-	-	40		2
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	-	-	-	-	-	-	1	-	-	-	1	-	-	20	-	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'89			00%			00%			00%						
		'97			00%			00%			00%						
Total Plants/Acre (excluding Dead & Seedlings)												'89		0	Dec:		-
												'97		20			-

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Quercus gambelii																		
S	89 97	- 9	- -	- -	- -	- -	- -	1 -	- -	- -	1 9	- -	- -	- -	66 180		1 9	
Y	89 97	14 31	- 4	- -	6 7	- -	- -	8 -	- -	- -	28 42	- -	- -	- -	1866 840		28 42	
M	89 97	19 171	1 7	- -	8 -	- -	- -	- 10	- -	- -	28 184	- 4	- -	- -	1866 3760	101 42	31 26	28 188
D	89 97	1 3	- -	- -	- -	- -	- -	- -	1 -	- -	1 3	- -	1 -	- -	133 60		2 3	
X	89 97	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0 740		0 37	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		02%			00%			02%			+17%							
'97		05%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	3865	Dec:	3%			
												'97	4660		1%			
Rosa woodsii																		
Y	89 97	- 2	- -	- -	- -	- -	- -	- -	- -	- -	- 2	- -	- -	- -	0 40		0 2	
M	89 97	- 17	- -	- -	- -	- -	- -	- -	- -	- -	- 17	- -	- -	- -	0 340	- 20	- 18	0 17
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%										
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	0	Dec:	-			
												'97	380		-			
Symphoricarpos oreophilus																		
S	89 97	2 11	- -	- -	- -	- -	- -	- -	- -	- -	2 11	- -	- -	- -	133 220		2 11	
Y	89 97	43 60	- -	- -	3 -	- -	- -	3 -	- -	- -	49 60	- -	- -	- -	3266 1200		49 60	
M	89 97	125 127	- -	- -	40 32	- -	- -	14 -	- -	- -	112 159	- -	67 -	- -	11933 3180	15 14	14 16	179 159
D	89 97	11 1	- -	- -	1 -	- -	- -	- -	- -	- -	4 1	- -	8 -	- -	800 20		12 1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			31%			-72%							
'97		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	15999	Dec:	5%			
												'97	4400		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Tetradymia canescens																		
M	'89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'97	2	-	-	-	-	-	-	-	-	2	-	-	-	40	7	8	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'89			00%			00%			00%							
		'97			00%			00%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'89		0	Dec:	-		
												'97		40		-		